Chronic Total Occlusions
(TCTAP A-158 to TCTAP A-165)

TCTAP A-158

Endovascular Treatment of Patients with Chronic Coronary Heart Disease and Nonbypassable Coronary Arteries

Bagrat Alekyan, Leo Bockeria, Yurii Buziaschvili, Elena Goluhova, Tatyana Nikitina, Anton Staferov, Narek Zakaryan, Artur Sargsyan
Bakuolev Center for Cardiovascular Surgery, Moscow, Russia

Background: Study of the clinical condition and angiographic semiotics of the coronary arteries before and after percutaneous coronary intervention (PCI) in patients, who were denied surgical myocardial revascularization due to nonbypassability of the coronary arteries.
Methods: During the period from 2009 till 2013, 128 patients with multivessel CHD who were denied surgical myocardial revascularization due to nonbypassability of the coronary arteries underwent coronary artery stenting in the Bakoulev Scientific Center for Cardiovascular Surgery of the Russian Academy of Medical Sciences. The age of the patients ranged from 42 to 84 years (average 61 ± 12.5 years). 64 (50.0%) patients had angina pectoris of IV functional class, 51 (39.8%) - III functional class, and 13 (10.2%) - II functional class. 106 (82.8%) patients had myocardial infarction in anamnesis. Left ventricular ejection fraction ranged from 40 to 63% (average 48 ± 12%).

During selective coronary angiography, hemodynamically significant damage of 316 arteries was detected in 128 patients: occlusions and hemodynamically significant stenoses were detected in 190 (60.1%) and 126 (39.9%) cases, respectively. Two-and three-vessel damage was detected in 68 (53.2%) and 60 (46.8%) patients. Length of occlusive lesions ranged from 9 to 48 mm (average 37.9 ± 4.7 mm). Angiometric evaluation of post-occlusive segments at the level of the best visualization of the distal third of the artery available for the surgical revascularization, was performed in all cases.

Percutaneous coronary intervention was performed on 243 (76.8%) of 316 arteries: in 165 cases - at occlusions and in 78 cases – at hemodynamically significant stenoses. In total, 388 drug-eluting stents were implanted, 2. 97 ± 0.7 stents per patient on average.
Results: Radio-endovascular interventions on affected coronary arteries were accompanied by improvement of clinical status: 22 (17.2%) patients had no clinical signs of angina pectoris, 44 (34.4%) patients had exertional angina of I functional class, 45 (35.2%) patients – of II functional class, and 17 (13.2%) patients had exertional angina of III and IV functional class due to incomplete revascularization of the myocardium. In 150 (91%) of 165 cases recanalization and stenting of occluded coronary arteries were successfully performed. Hemodynamically significant stenoses were successfully eliminated in 78 (100%) cases. According to angiometry data, the diameter of post-occlusive segments increased on average from 0,56 ± 0,42 mm to 1,7 ± 0,6 mm (ranging from 1.0 to 3.2 mm), ($p < 0,001$) in 83% of cases. However, in 17% of cases, the diameter of the post-occlusive segment was less than 1.0 mm (ranging from 0.2 to 0.9 mm). In this group, diabetes mellitus was diagnosed in 80% of cases. When performing percutaneous coronary intervention in 128 patients, complications developed in four (3.2%) patients: subacute stent thrombosis in one (0.8%) case, pulsatile hematoma - in three (2.4%) cases.
Conclusion: Significant increase in the distal bed from 0.56 ± 0.42 mm to 1.7 ± 0.6 mm in 83% of cases after recanalization of chronic occlusions indicates the possibility of surgical treatment of patients with small diameter of post-occlusive coronary artery segments. Small diameter of post-occlusive coronary artery segments should not be regarded as a reliable evidence of the diffuse damage of the distal bed, which often serves as the basis for denial surgical myocardial revascularization.

TCTAP A-159

Impact of Percutaneous Coronary Intervention for Chronic Total Occlusion in Stroke Patients

Seung-Woon Rha, Byoung Geol Choi, Se Yeon Choi, Yoonjee Park, Akkala Raghavender Goud, Hu Li, Sunki Lee, Ji Bak Kim, Sung Il Im, Jin Oh Na, Cheol Ung Choi, Hong Euy Lim, Jin Won Kim, Eung Ju Kim, Chang Gyu Park, Hong Seog Seo, Dong Joo Oh
Korea University Guro Hospital, Seoul, Korea (Republic of)

Background: Chronic total occlusion (CTO) intervention is still challenging because of the limited procedural success rate and high target failure. The impact of percutaneous coronary intervention (PCI) for CTO in patients with stroke is not clear. We evaluated the 12-month clinical outcomes between intervention and medical therapy for CTO lesions in stroke patients.
Methods: A total of 59 consecutive CTO patients were divided into 2 groups according to treatment; one group underwent intervention (PCI group; n=16) and the other group was treated with medical therapy (Mx group; n=43). 12-month clinical outcomes were compared between the two groups.
Results: At baseline, patients in both groups were balanced. In lesion characteristics, the Mx group showed a higher prevalence of RCA lesion and RCA-CTO. Clinical outcomes at 12 months were balanced between the 2 groups. Similar results were observed after baseline adjustment by multivariate analysis.
Conclusion: In our study, no significant difference was found between interventional therapy and medical therapy for CTO in stroke patients. Long-term follow up with a larger study population will be necessary for further evaluation.

Table. 12-month clinical outcomes

Variable,n	PCI (n=16)	Mx (n=37)	P Value (Unadjusted)	P Value (Adjusted)	OR (95%CI)
Mortality	0 (0)	7 (18.9)	0.062	0.990	-
Cardiac death	0 (0)	3 (8.1)	0.241	NS	-
Non cardiac death	0 (0)	3 (8.1)	0.241	NS	-
Myocadial infaction; MI	0 (0)	4 (10.8)	0.171	0.999	-
Q wave MI	0 (0)	2 (5.4)	0.343	NS	-
Non W wave MI	0 (0)	2 (5.4)	0.343	NS	-
Revascularization	1 (6.2)	1 (2.7)	0.534	0.998	-
TLR	1 (6.2)	0 (0)	0.125	NS	-
TVR	1 (6.2)	1 (2.7)	0.534	NS	-
Non TVR	1 (6.2)	0 (0)	0.125	NS	-
All MACE	1 (6.2)	8 (21.6)	0.171	0.100	-
TLR MACE	1 (6.2)	4 (10.8)	0.602	NS	-
TVR MACE	1 (6.2)	8 (21.6)	0.171	NS	-

Adjusted by gender, age, myocardial infarction, hypertension, diabetes, chronic kidney disease, current smoker, multivessel disease, collateral vessels(≥grade 2), and failed CTO procedure.

TCTAP A-160

Impact of Percutaneous Coronary Intervention for Chronic Total Occlusion in Elder Patients

Seung-Woon Rha, Byoung Geol Choi, Se Yeon Choi, Yoonjee Park, Akkala Raghavender Goud, Hu Li, Sunki Lee, Ji Bak Kim, Sung Il Im, Jin Oh Na, Cheol Ung Choi, Hong Euy Lim, Jin Won Kim, Eung Ju Kim, Chang Gyu Park, Hong Seog Seo, Dong Joo Oh
Korea University Guro Hospital, Seoul, Korea (Republic of)

Background: Chronic total occlusion (CTO) intervention is still challenging because of the limited procedural success rate and high target failure. The impact of percutaneous coronary intervention (PCI) for CTO in elder patients is not clear. We evaluated the 12-month clinical outcomes between intervention and medical therapy for CTO lesions in elder patients.
Methods: A total of 303 consecutive CTO patients of ages ≥65 were divided into 2 groups according to treatment; one group underwent intervention (PCI group; n=101) and the other group was treated with medical therapy (Mx group; n=202). 12-month clinical outcomes were compared between the two groups.
Results: At baseline, patients in the PCI group showed a higher prevalence of prior PTCA and LAD-CTO. Patients in the Mx group showed higher prevalence of left main disease, LAD lesion, LCX lesion, RCA lesion, multivessel disease, multivessel CTO, RCA-CTO, and collateral vessels (≥grade 2). Clinical outcomes at 12 months were balanced between the 2 groups. Similar results were observed after baseline adjustment by multivariate analysis.
Conclusion: In our study, no significant difference was observed between interventional therapy and medical therapy for elderly CTO patients. Long-term follow up with a larger study population will be necessary for further evaluation.

Table. 12-month clinical outcomes

Variable,n	PCI (n=169)	Mx (n=133)	P Value (Unadjusted)	P Value (Adjusted)	OR (95%CI)
Mortality	1 (0.5)	3 (2.2)	0.209	0.413	0.61 (0.19 - 1.96)
Cardiac death	1 (0.5)	3 (2.2)	0.209	NS	-
Non cardiac death	-	-	-	-	-
Myocadial infaction; MI	2 (1.1)	3 (2.2)	0.469	0.394	0.52 (0.12 - 2.28)
Q wave MI	2 (1.1)	2 (1.5)	0.809	NS	-
Non W wave MI	0 (0)	1 (0.7)	0.259	NS	-
Revascularization	18 (10.6)	11 (8.2)	0.486	0.577	0.72 (0.23 - 2.24)
TLR	14 (8.2)	3 (2.2)	0.024	0.111	6.62 (0.64 - 67.7)
TVR	18 (10.6)	8 (6)	0.154	NS	-
Non TVR	1 (0.5)	4 (3)	0.102	NS	-
All MACE	19 (11.2)	13 (9.7)	0.681	0.407	0.69 (0.29 - 1.64)
TLR MACE	15 (8.8)	6 (4.5)	0.139	NS	-
TVR MACE	19 (11.2)	11 (8.2)	0.391	NS	-

Adjusted by gender, age, myocardial infarction, hypertension, diabetes, chronic kidney disease, current smoker, multivessel disease, collateral vessels(≥grade 2), and failed CTO procedure

POSTERS